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Fish Hold Effluent and Fish Hold Cleaning Wastewater Discharge

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The EPA technical contacts for this document are Robin Danesi (202) 564-1846 and Ryan Albert (202) 564-0763.

EXECUTIVE SUMMARY

Commercial fishermen store the fish and shellfish they catch in some form of chilled condition on board their fishing vessels, to keep their catch fresh until delivery to an onshore seafood processor. Most seafood is either dead when brought onboard or is killed shortly thereafter, before being stored in a refrigerated seawater holding tank, with the exception of certain shellfish (e.g., crab, lobster), which must be kept alive. The two most common methods of cooling seawater are by mechanical refrigeration or by adding ice (or ice slurry or ice chips). In general, refrigerated seawater (RSW) systems are used aboard purse seiners, tenders and some trawlers, while ice is used aboard gillnetters, longliners, trollers and some trawlers. Other vessels (e.g., large shrimping vessels in the Gulf of Mexico) use dry freezers to preserve their catches, while lobster and crab boats have seawater flow-through tanks used to keep their catch alive.

Fish hold effluent includes RSW, ice and melted ice that remains in the fish hold after the catch has been off-loaded at the seafood processor. The water that is drained as the ice melts during the fishing expedition is also considered to be fish hold effluent. Common practice aboard commercial fishing vessels is to discharge the fish hold effluent overboard immediately following off-loading of the catch at the onshore seafood processor. Following evacuation of the catch, the fish hold may be cleaned; any fish hold cleaning wastewaters are also discharged overboard. The fish hold effluent and fish hold cleaning wastewater are discharged in the water body adjacent to the vessel, with only a few exceptions. At least one port was identified that captures fish hold effluent along with dock and pier runoff and transports it into the municipal sewer system.

The water quality characteristics of fish hold effluent reflect contributions from various sources: vessel and fish hold materials and coatings, ambient water, potable/service water, and the seafood product itself. EPA collected fish hold effluent discharge samples from 31 commercial fishing vessels, and fish hold cleaning discharge samples from 9 vessels for their *Study of Discharges Incidental to Normal Operation of Commercial Fishing Vessels and Other Non-Recreational Vessels Less Than 79 Feet* (USEPA, 2010). Elevated concentrations of certain total and dissolved metals, as well as many of other pollutants, were measured in fish hold effluent and fish hold cleaning wastewater. Elevated metals concentrations were found for total iron, dissolved and total copper, total arsenic, dissolved zinc and selenium. BOD, TSS, turbidity, and nutrient parameters (NH3-N, TKN, and TP) were found at elevated concentrations that were often higher than those typically found in domestic sewage.

The volume of fish hold effluent discharged by a fishing vessel depends on the size of the vessel, the number of fish holds and their volumes, the method used for keeping the catch fresh (RSW, ice, etc.) and the frequency at which the catch is off-loaded. These discharges are not continuous, but occur periodically when the fishing vessel is in operation during the fishing season. Fish hold cleaning wastewater discharges also occur on a periodic basis; however, the volumes are considerably smaller.

To date there has been little regulation of fish hold effluent discharges. Discharges "incidental to the normal operation of a vessel" were excluded from the National Pollutant Discharge Elimination System (NPDES; 40 CFR 122.3). That exclusion did not apply when the

discharges were due to operation of the vessel "in a capacity other than as a means of transportation . . . such as when used as . . . a seafood processing facility." Of five states with significant commercial fishing industries surveyed, only one (Virginia) was found to have a NPDES permit for fishing vessel operations.

Although the most common practice for commercial fishing vessels is to discharge their fish hold effluent and fish hold cleaning wastewater overboard after unloading their catch in port, transfer of these effluents ashore for treatment and disposal may be a practical alternative for managing these wastes. This practice was encountered in two locations: San Francisco, California and Sitka, Alaska. Using average fish hold effluent BOD and TSS concentrations and average rates for industrial users of municipal wastewater treatment plants (WWTPs), the cost for sewage treatment and disposal of fish hold effluent was estimated to be $5.02 /1,000 gallons.

SECTION 1
INTRODUCTION

This document addresses fish hold effluent and fish hold cleaning wastewater, two common discharges from commercial fishing vessels. Commercial fishing vessels are vessels that commercially engage in the catching, taking, or harvesting of fish and shellfish or an activity that can reasonably be expected to result in the catching, taking, or harvesting of fish and shellfish. Commercial fishing vessels include any vessels harvesting fish, crab, lobster, shrimp, or other aquatic organisms for commercial sale.

Commercial fishermen store the fish they catch in some form of chilled condition on board their fishing vessels, to keep their catch fresh until delivery to a seafood processor. Most seafood is either dead when brought onboard or is killed shortly thereafter, before being stored in a refrigerated seawater holding tank, with the exception of certain shellfish (e.g., crab, lobster), which must be kept alive. The two most common methods of cooling seawater are by mechanical refrigeration or by adding ice (or ice slurry or ice chips). In general, refrigerated seawater (RSW) systems are used aboard purse seiners, tenders and some trawlers, while ice is used aboard gillnetters, longliners, trollers and some other trawlers. Other vessels (e.g., large shrimping vessels in the Gulf of Mexico) use dry freezers to preserve their catches, while lobster and crab boats have seawater flow-through tanks used to keep their catch alive.

Commercial fishing vessels may employ various methods of collection including nets, trawls, traps, or hook-and-line to capture the target species. The major classes of fishing vessels are differentiated by fisheries, geographic distribution, and how the fish are stored onboard ships. Fish hold effluent and fish hold cleaning wastewater discharge practices vary according to these differences. The type of fish usually determines both the method of onboard storage and the process by which catch is removed from fish holds when the vessel returns to port, as discussed in the following section of this document.

For vessels with refrigerated seawater tanks, the catch is typically extracted from fish holds by pumping the fish and the accompanying RSW out of the hold, often with the use of additional ambient water called bail water. The RSW and bail water is often captured and recirculated back to the hold and pumped multiple times, until all fish have been removed from the fish hold. Any excess RSW or bail water that is not required to assist in fish extraction is pumped overboard pierside. Vessels that use chipped or slurry ice generally remove the seafood and then discharge the spent ice overboard pierside. Occasionally, vessels that store their catch in ice slurry also use vacuum filtration systems (e.g., some shrimping boats in the Gulf of Mexico).

Tanks used to keep lobster and crab catch alive, pump surrounding water into the tank continuously to maintain the highest water quality possible. The flow rate through these systems results in a constant discharge of fish hold effluent. Because the majority of the seafood product remains alive, there is little biological decay or degradation in the tank. Furthermore, because these tanks have reasonably rapid flushing times and a continuous discharge, there is a little accumulation of pollutants.

Fish hold effluent includes RSW, ice and melted ice that remains in the fish hold after the catch has been off-loaded. The water that is drained as the ice melts during the fishing expedition is also considered to be fish hold effluent. Standard practice for disposal of fish hold effluent aboard commercial fishing vessels is to discharge the fish hold effluent overboard immediately following off-loading at the seafood processor.

Fish holds are also often cleaned or disinfected by vessel crews between catches. All fish holds are evacuated (i.e., completely emptied) for cleaning. To rinse the fish hold tank, vessel crews use either municipal water from the pier or dock or they pump water from the surrounding ambient water. Cleaning may simply involve rinsing the tanks with this water, or crews sometimes add detergents or disinfectants. Crews also often use scrub brushes to clean the walls and floor of the fish hold to maximize the removal of organic material. Fish hold cleaning wastewater is a combination of residual fish hold water and ambient or municipal water and often contains soaps or detergents.

The fish hold water, bail water (including bail water that is transferred with the catch to the docks of most off-loading facilities), melted ice and/or fish hold cleaning wastewaters are typically discharged in the adjacent water body, with only a few exceptions. Two ports (San Francisco, California and Sitka, Alaska) were identified that had methods of capturing fish hold effluent for treatment and disposal. San Francisco's Pier 45 conveys the fish hold effluent along with dock and pier runoff into the municipal sewer system. Some fish processing facilities, such as the Sitka Seafood Processors Co-op, may collect the fish hold effluent and treat it. However, most ports and processing facilities are not equipped to capture the high volume of water contained in fish holds. Overboard fish hold effluent and fish hold cleaning wastewater discharges are not currently regulated by EPA in the current VGP.

SECTION 2
FISHING VESSEL TYPES, FISHERIES, GEOGRAPHIC DISTRIBUTION, AND FISH HOLD DISCHARGE PRACTICES

Commercial fishing vessels may employ various methods of collection including nets, trawls, traps, or hook-and-line to capture the target species. This section describes the major classes of fishing vessels, including how they vary according to different fisheries and geographic distribution. It also discusses how the fish are stored aboard ship, and how fish hold discharge practices vary according to these differences.

Approximately 70,000 commercial fishing vessels operate in US waters, representing the largest category of vessels in the *Report to Congress: Study of Discharges Incidental to Normal Operation of Commercial Fishing Vessels and Other Non-Recreational Vessels Less Than 79 Feet* (USEPA, 2010). The majority of commercial fishing vessels are relatively small compared to other nonrecreational vessels such as barges or utility vessels, with 56 percent of commercial fishing vessels in the 26- to 50-foot range (USEPA, 2010).

In any geographic region, commercial fishing is a highly diverse industry. Based on personal communication with a representative of United Fishermen of Alaska, Alaska has approximately 10,000 active fishing vessels ranging in size from 7 feet to 635 feet and including skiffs, gillnetters, purse seiners, trawlers, crabbing vessels, tenders, and trollers (see Attachment A). Of these vessels, many are equipped to fish several different species throughout the year by modifying their gear type. Gear type modification mainly involves changing deck equipment and other machinery. Almost all purse seiners, tenders, and crabbing vessels have RSW systems, while hook and line and set-net vessels use ice tanks. A vessel with an installed RSW system would not use the tanks as ice tanks even if their gear type changed.

2.1 LOBSTER/CRABBER

Lobster and crab (Dungeness, King, Tanner, and Blue) boats target their catch using twine or wire-meshed steel pots (traps). Baited pots are left to “soak” for up to several days before retrieval. Lobster pot vessels are typically found in southern California and in the New England coastal states from Maine to Rhode Island. In southern California, the spiny lobster is the primary target species, while in New England the American lobster is the primary target. Lobster and crab boats vary in shape size and range from aluminum skiffs with outboard motors that fish the inside waters, to seagoing vessels 100 or more feet in length that fish the Bering Sea and the Gulf of Alaska for king crab (USEPA, 2010). During the 2010 Study of vessel discharges, EPA observed lobster boats with flow-through tanks that pump ambient sea water into the lobster tanks, and then discharged directly overboard. Flow-through tanks are used to keep lobsters alive until the lobster boat reaches the seafood processing facility.

Crab boats that fish the in-shore waters along the East Coast and Gulf Coast range in size from approximately 24 feet to 40 feet. The Chesapeake Bay, North Carolina and Louisiana coasts support the largest blue crab fisheries (SCDNR, 2010). Commercial fishing methods for blue crabs include crab pots and trot lines. Blue crabs are placed in a ventilated container (e.g., bushel basket) with a moist cloth covering the top, rather than in water which can suffocate blue

crabs when oxygen levels drop. Since blue crabs are placed in ventilated containers rather than a tank of water, no effluents are discharged from these fishing vessels.

Vessels catching Dungeness, king and snow crabs are typically between 50 feet and 150 feet in length and are larger than crab boats used along the East Coast and Gulf Coast for catching blue crabs. Dungeness crabs exist in commercial quantities from Alaska to south of San Francisco, California. Along the Pacific coast, Dungeness crabs live in the intertidal zone out to a depth of 170 meters. Dungeness crabs are stored alive in holds on boats that are filled with re-circulating sea water and are delivered every few days to seafood processing plants. Once the catch is off-loaded at the processing plants, any remaining seawater in the tanks is discharged overboard pierside. King and Snow crabs are found in the waters off the Alaskan coast such as the Bering Sea. Like Dungeness crabs, King and Snow crabs are stored alive in holds on boats that are filled with re-circulating sea water until they can be delivered to the seafood processing plant. Water in the tanks is discharged overboard as the catch is off-loaded at the processing plant.

2.2 SCALLOP DREDGE

A scallop dredge or oyster dredge, is a dredge which is towed along the bottom of the sea by a fishing boat to collect scallops, oysters, clams, crabs, and in some cases, sea cucumbers. Dredge boats used to collect clams, oysters, and crabs in near-shore estuarine waters range from 24 feet to 50 feet long. Offshore dredge boats used to collect sea scallops can be as large as 190 feet long (USEPA, 2010). The largest wild scallop fishery is the Atlantic sea scallop (*Placopecten magellanicus*) fishery found off the shores of the northeastern United States and eastern Canada; however, scallops are harvested along all United States coastal areas as far north as Alaska. Some scallop dredging boasts process and freeze scallops at sea, while others have RSW holding tanks that off-load fresh scallops at a shore-side processing facility. Fish hold effluent and fish hold cleaning wastewater is discharged overboard at the pier.

2.3 FISH TENDER

A fish tender vessel supports fishing vessels by providing supplies, fish products or other materials, and additional refrigerating space; storing the catch; and transporting the catch from the fishing vessels to the fish processing facility. During specific fishing seasons, fish tenders can also be fitted into a crabbing vessel. Fish tenders range in size from 50 to 130 feet in length. In southeast Alaska, fish tenders are typically used to transfer chum salmon (*Oncorhynchus keta*) from offshore fishing boats to the shore-side fish processing facility. Fish tenders are often large vessels with large fish holds filled with RSW. In Alaska, fish and RSW are pumped into the seafood processing facility where fish are collected into tanks for further processing and a portion of the RSW is returned to the vessel to continue the fish removal process. The remaining portion of the RSW is discharged to ambient water pierside. Ultimately, all the RSW from the vessel is discharged in this manner along with any fish hold cleaning wastewater.

Due to the large size of these tender vessels, the fish hold cleaning process lasts much longer than for other vessels. The tanks are generally rinsed and then filled with water and a mild detergent. The solution is then allowed to circulate in the tank system for several hours before the fish hold cleaning wastewater is discharged pierside.

2.4 GILLNETTER

Gillnetters catch a variety of fish, such as salmon and herring, by setting curtain-like nets perpendicular to the direction in which the fish are traveling as they migrate along the coast toward their natal streams. Gill netting is performed in nearly all coastal waters of the United States, including the Great Lakes (MDNRE, 2010). Nets can be set in place, such as at or near the mouths of rivers, or allowed to drift freely in deep water. Gillnet vessels are usually 30 to 40 feet long and are easily recognized by the drum on either the bow or the stern on which the net is rolled (ADFG, 2008). Fish caught by gillnetters are dead when pulled aboard. Gillnetters typically gut the fish on-board, and then place the gutted fish in a hold filled with wet ice. In southeast Alaska, the wet ice is discharged overboard at the pier after the fish have been unloaded at the seafood processor. Any wastewater generated by fish hold cleaning is also discharged overboard at the pier.

2.5 LONGLINER

Longliners catch fish (primarily halibut, black cod, swordfish, tuna and shark) via a longline that is either laid on the bottom or suspended in the water column. Long line fishing is conducted in nearly all coastal areas of the United States (NJDA, 2010; NMFA, 2010). Each longline can be up to a mile in length and have thousands of baited hooks. A longline vessel typically sets several lines for a 24 hour "soak." Fish brought aboard long-line boats are either cleaned immediately or placed in ice in the vessels' hold until they reach the seafood processing plant. Based on personal communication with Alaskan Longline Fishermen's Association, almost all longliners do some amount of fish processing immediately after the fish are caught. This can includes gutting, bleeding, heading or cleaning the fish before stowing them into their fish holds (see Attachment A).

Longliners are typically 50 to 100 feet in length (USEPA, 2010). The vast majority of longliners have fish hold tanks that are filled with clean ice prior to fishing. As the tanks are filled with fish and the ice melts, any water is automatically pumped out of these tanks via the bilge pump. In southeast Alaska, the remaining ice from the fish hold is discharged overboard, usually pierside at the seafood processor. The tanks stay relatively clean due to the use of ice. Based on personal communication with Alaskan Longline Fishermen's Association, some longliners clean their fish holds between each off-load (see Attachment A) while others add fresh ice to the tanks before leaving on another fishing trip and clean their fish holds periodically. The tanks are pressure washed with water; dish soap, biodegradable detergents, or a very mild bleach solution is added when needed. The wastewater from pressure washing is discharged directly overboard.

Based on personal communication with Western Fishboat Owners Association, some longliners that fish for tuna in the Pacific Ocean use dry blast freezing systems (see Attachment A). These dry blast vessels are similar to the trollers in the Gulf Coast used to catch shrimp in that they have no fish hold discharges but do occasionally need to be cleaned between seasons. The fish are caught and immediately frozen whole, with no processing on board the vessels. The reason for this is that tuna tend to be very clean fish and the tuna industry prefers that all processing to be done at the processing plant closest to where the fish is ultimately consumed. The cleaning of the fish hold aboard these vessels is similar to defrosting a refrigerator, and any

water or condensation is discharged overboard. The tuna season generally lasts from June to late October, but there is some amount of fishing occurring in American Samoa during other parts of the year.

2.6 PURSE SEINER

Purse seiners catch fish that school close to the surface, such as salmon, herring, and sardines, by encircling them with a long net and drawing (pursing) the bottom closed to capture the fish. Purse seiners are used in Alaska primarily for salmon, while in New England and along the Gulf Coast, purse seiners are used to capture species such as menhaden (Smith, 1991). Purse seiner vessels in Alaska are limited to a maximum length of 58 feet (ADFG, 2010) to control the salmon harvest, while purse seine vessels in New England targeting menhaden generally range from 140 to 170 feet in length (Smith, 1991). Fish caught on purse seiners are normally placed in a RSW fish hold and are off-loaded at the seafood processing facility. Refrigerated sea water is pumped to the seafood processing facility along with the fish during off-loading. A portion of the water is returned to the vessel to assist in additional fish off-loading, while the remaining water is discharged pierside. Ultimately, all of the fish hold effluent is discharged once the fish have been off-loaded. Fish holds aboard purse seiners are cleaned by filling the tanks with water and a mild detergent and allowing it to circulate for some time before the water is discharged pierside.

2.7 TRAWLER

Trawlers, also called draggers, typically catch large quantities of mid-water species, such as pollock or pink shrimp, and bottom-fish, such as flounder, by towing a large, cone-shaped net. Trawlers are common in the New England fishery for bottom fish, and in the Gulf of Mexico for shrimp. Trawlers also operate along the Pacific Coast from California to Alaska, targeting sablefish and longspine and shortspine thornyheads (*Sebastolobus altivelis* and *Sebastolobus alascanus*). Dover sole is generally captured using deep water trawls while rockfish is caught with midwater and bottom trawls (Gilden, 1999). Alaskan trawlers target mackerel and Pacific cod in the Bearing Sea. Trawlers range in size from small shrimp trawlers to large, 600-foot ocean Pollock and Pacific Cod trawlers that possess onboard processing facilities (USEPA, 2010). Trawlers can either store fish in ice-filled hold tanks, or RSW tanks, or process, package and freeze the fish on board. As an example, a 160-foot trawler available for purchase in the northeastern United States has four RSW tanks with a 250-ton capacity and a freezer hold that can accommodate 400,000 lbs of squid in bags; 218,000 lbs. of mackerel (8,400 cases); or 292,000 lbs. of herring (8,400 cases). Trawlers that preserve fish using wet ice or RSW discharge the ice/water overboard when the catch is off-loaded at the seafood processing facility. Any fish hold cleaning wastewater would also be discharged at the pier. Those that process, package and freeze fish on board do not have a wastewater discharge from the fish-hold. These vessels would, however, discharge wash-down waters from decks and fish processing areas.

2.8 TROLLER

Troll vessels catch fish such as salmon and tuna by “trolling” bait or lures on lines through feeding concentrations of fish. Commercial troll fishing is conducted in Alaska primarily for salmon, while commercial troll fishing in the northeastern United States targets species such as tuna and mahi-mahi. Trolling vessels vary in size and configuration, ranging from small,

hand-trolling skiffs to large, ocean-going power trolling vessels of 50 feet or more in length. Troll fish are gutted after being caught and placed in a fish hold containing wet ice. In Alaska, the majority of the wet ice and fish hold cleaning effluent is discharged overboard after the catch is off-loaded.

SECTION 3
WATER QUALITY CHARACTERISTICS OF FISH HOLD EFFLUENT AND FISH HOLD CLEANING WASTEWATER

The water quality characteristics of fish hold effluent and fish hold cleaning wastewater reflect contributions from various sources: vessel and fish hold materials and coatings, ambient water, potable/service water, and the seafood product itself (USEPA, 2010). If the seafood is not frozen, but preserved in RSW or ice slurry, small quantities of organic material from the catch (e.g., lipids, protein) will be released as the fish degrade, thereby increasing the concentration of these constituents in the discharge. Furthermore, different volumes of blood, mucus, and other matter can drain from the seafood into the hold, depending on how the fish is cleaned on deck. For example, salmon, when caught via gillnets on gillnetting vessels, are cut at the gills and bled and then placed into the fish hold with RSW or ice before being cleaned (USEPA, 2010). This results in their internal organs and some blood leaking into the water. In contrast, salmon caught on trollers are cleaned while the fishing vessel is still at sea and the internal organs are discarded into the surrounding waters. Hence, on the salmon trollers, the organs and most of the residual blood are not in contact with RSW or ice and consequently, lower quantities of these materials are discharged when the vessel empties and cleans its hold at dock.

EPA collected fish hold effluent samples from 31 commercial fishing vessels, and fish hold cleaning wastewater samples from 9 vessels for their study of vessel discharges (USEPA, 2010). EPA generally collected single grab samples from these vessels while the vessels were dockside. These samples were usually collected while the effluent was being discharged, but they were occasionally collected directly from the fish hold. The samples were analyzed for both total and dissolved metals, classical pollutants (biochemical oxygen demand, oil and grease, sulfide, total suspended solids and other physical-chemical parameters) pathogens, and nutrients. EPA also analyzed the fish hold cleaning wastewater samples and three fish hold effluent samples for nonylphenols (USEPA, 2010).

Section 3.4 of EPA's *Report to Congress on the Study of Discharges Incidental to Normal Operation of Commercial Fishing Vessels and Other Non-recreational Vessels Less than 79 Feet* (USEPA, 2010) summarizes the specific analytes detected in fish hold and fish hold cleaning effluent water. EPA's interpretation of the likely risks posed by these analytes to human health and the environment, relative to pollutant loadings, background ambient and source water contaminant levels and characteristics, and other relevant information useful for this assessment, is presented in Chapter 5 of the report to Congress and summarized below.

Elevated concentrations of certain total and dissolved metals, as well as many other pollutants, were measured in fish hold and fish hold cleaning effluent. Elevated concentrations were found for total iron, dissolved and total copper, total arsenic, dissolved zinc and selenium. Concentrations of total and dissolved metals in fish hold cleaning effluent were generally similar to, but lower than, those measured in fish hold effluent samples.

Several classical pollutants found in fish hold effluent and fish hold cleaning wastewater may have the potential to pose risk. BOD was found at elevated concentrations in all samples and, in many instances, was found at higher concentrations than those in typical raw domestic

sewage. Concentrations of COD and TOC correlated with BOD concentrations and were similarly elevated in all samples. The high BOD likely contributed to the pervasively low dissolved oxygen levels. Total suspended solids (TSS) and turbidity in fish hold effluent and fish hold cleaning wastewater were also similar to levels found in typical raw domestic sewage. Sulfide concentrations were elevated, particularly in samples from a New England ground fishery trawler. Nutrient parameters, particularly NH3-N, TKN, and TP, were all measured at concentrations comparable to typical raw domestic sewage. High pathogen concentrations were found in a few fish hold effluent and fish hold cleaning wastewater samples; however, the source of pathogens was likely contaminated ambient background water used to clean the decks aboard these vessels (USEPA, 2010).

SECTION 4
VOLUMES AND RATES OF DISCHARGE OF FISH HOLD EFFLUENT AND FISH HOLD CLEANING WASTEWATER

The volume of fish hold effluent generated by a fishing vessel depends on the size of the vessel, the number of fish holds and their volumes, the method used for keeping the product fresh (RSW, ice, etc.) and the frequency at which the catch is off-loaded. The discharge of fish hold water is not continuous, but occurs periodically when the fishing vessel is in operation during the fishing season. Fish hold cleaning wastewater discharges also occur on a periodic basis; however, the volumes are considerably smaller.

Vessels such as small salmon trollers or longliners that frequent Alaska waters have approximately 1,500 gallons of fish hold storage. EPA estimated this volume is occupied by approximately 50 percent fish and 35 to 40 percent ice when the vessel off-loads at the seafood processing facility (USEPA, 2010). The ice, which is thrown overboard daily after the fish are unloaded, would result in a fish hold discharge of between 500 and 600 gallons per day (gpd) for these types of vessels on days they are actually fishing (fish hold volumes, fish hold effluent discharges, and fish hold cleaning wastewater discharges are summarized in Table 1).

EPA estimated that mid-size fishing vessels, such as gill netters, and purse seiners found in Alaska, and shrimp boats in the Gulf of Mexico, have fish hold volumes of between 3,000 and 5,000 gallons. Assuming these vessels have between 35 and 40 percent of ice/water slurry in the fish hold tanks, they likely discharge between 1,000 and 2,000 gallons of fish hold water every two to three days when they are fishing. Larger fishing vessels such as offshore trawlers found off the coast of New England and tenders found in Alaska can have RSW holding tanks or ice hold tanks with capacities as large as 15,000 gallons. These tanks, which contain 30 to 40 percent RSW or ice after the seafood is unloaded, result in a fish hold discharge of between 4,500 and 6,000 gallons. These vessels are expected to unload their catch and discharge fish hold effluent every three to five days when operating during the fishing season.

Fish hold tanks are cleaned after the catch has been off-loaded at the seafood processing facility. Therefore, the frequency of fish hold cleaning depends on the type and amount of fish being caught. For example, offshore trawlers in New England might clean the fish hold tank every three to five days when they return to the fish processing facility. Small fishing vessels such as salmon trollers and longliners in Alaska, off-load the catch daily and also clean the fish hold tanks daily. Fish tenders and purse seiners with RSW tanks might clean their tanks every few days when they return to the fish processing facility.

On small fishing boats such as trollers and longliners, and mid-size fishing boats such as gill netters, fish holds are typically cleaned using a garden hose at a flow rate of approximately 10 to 12 gpm (USEPA, 2010). Fish hold cleaning is completed in 15 minutes or less, resulting in a discharge of between 150 and 200 gallons each day the vessel is fishing. Larger vessels such as offshore trawlers found in New England and large tenders in Alaska also use a garden hose to wash down the fish hold tanks; however, cleaning these tanks takes longer, approximately 30 minutes. EPA estimated the volume of fish hold cleaning wastewater discharged for these vessels

ranges between 300 and 400 gallons per cleaning, which are expected to occur every three to five days during fishing season (USEPA, 2010).

Table 1. Fish Hold Storage and Discharge Practices

Vessel Size	Fish Hold Storage Volume (gal.)	Frequency of Fish Hold Discharge and Fish Hold Cleaning Wastewater Discharge	Fish Hold Discharge Volume (gal.)	Fish Hold Cleaning Wastewater Discharge Volume (gal.)
Small: salmon trollers and longliners	1,500	Daily when fishing	500 - 600	150 - 200
Mid-size: gill netters, purse seiners and shrimp boats	3,000 – 5,000	Every 2-3 days when fishing	1,000 – 2,000	150 - 200
Larger: offshore trawlers and fishing tenders	up to 15,000	Every 3-5 days when fishing	4,500 – 6,000	300 - 400

Source: USEPA, 2010

SECTION 5
WASTE DISPOSAL PRACTICES FOR FISH HOLD EFFLUENT

To date there has been little federal regulation of fish hold effluent discharges (see Section 6 of EPA 2010 for an analysis of how incidental discharges are currently subject to regulation under US Federal Law or a binding international obligation of the United States). As documented in the previous sections, it is a common practice for commercial fishing vessels to discharge their fish hold effluent and fish hold cleaning wastewater overboard after unloading their catch. Transfer of these effluents ashore for treatment and disposal may be a practical alternative for managing these wastes. This practice was encountered in two locations: San Francisco, California and Sitka, Alaska.

Based on personal communication with the San Francisco Port Authority, the city recently finished re-engineering the pier deck of Pier 45 at Fisherman's Warf to capture all off-loaded water, ice and fish waste (see Attachment A). The Port had been named in a lawsuit in which one of their 15 tenant fish processors was sued for violating their storm water permit for allowing fish processing wastewater to drain into the bay. As a property owner, the Port was responsible for their tenant's compliance. In response, the Port of San Francisco installed a system that captures all fish processing waste as well as fish hold effluent. Funded by a $1.6 million grant from the Clean Water State Revolving Fund, the project included installation of a pumpout manifold that allows herring boats moored along the west apron of the Pier 45 fish processing facility to discharge fish hold effluent and fish waste to the city sewer system. The project also included installation of a new stormwater collection system along the west apron of Pier 45 to direct polluted stormwater runoff from this area back to the city's sewer system (SFPORT, 2009). The new pier deck system screens larger solids, which are collected and composted, and routes the separated wastewater to the municipal sewer system. Similar collection systems have been used by seafood processing plants for some time.

Based on personal communication with the Sitka Seafood Producers Co-op in Sitka, Alaska, the facility accepts "dirty" fish hold ice from fishing vessels (see Attachment A). This facility is permitted through the NPDES program to collect seafood processing wastewater, grind any solids (fish parts) using a macerator, and discharge the wastewater through their dockside outfall. The processing facility began voluntarily collecting dirty ice in the fall of 2009 from some fishing vessels, since the processor had the means to manage it onsite. As at other ports, the ice is usually shoveled overboard, but if the ice appears to be very bloody or contain significant fish guts and slime, the Sitka Co-op facility asks that the ice be shoveled into totes (the same totes used to off-load fish) and taken into the facility. There the ice is melted, and the melt water is then combined with the seafood processing wastewater. The Sitka Co-op operates a fleet of about 120 hook and line vessels and four gillnetters, the majority of which use only ice tanks. RSW tanks are primarily used by purse seiners, which are not members of the co-op. The four gillnetters and a half dozen of the hook and line vessels use RSW tanks or a mixture of ice and ambient seawater. These vessels have no means of pumping their fish hold effluent into the facility, so these vessels discharge their fish hold effluent directly overboard per their usual practice.

As the San Francisco Port and Sitka Co-op examples illustrate, different methods and facilities are required to convey ice and RSW ashore for treatment and disposal. Based on personal communication with West Coast Seafood, in regions such as the Pacific Northwest, fish processors are generally located in secluded or rural areas where the local sewer or WWTPs may not have the capacity to handle large volumes of fish hold effluent (see Attachment A). In larger metropolitan areas (such as San Francisco) this would not be a limitation.

SECTION 6
ESTIMATED COST OF FISH HOLD EFFLUENT AND FISH HOLD CLEANING WASTEWATER WASTE TREATMENT AND DISPOSAL

The cost of treating and disposing fish hold effluent and fish hold cleaning wastewater at a publically owned treatment works was estimated using average 2007 rates for industrial users (NACWA, 2008), as shown below in Table 2. Average concentrations for BOD (840 mg/L) and TSS (210 mg/L) measured in fish hold effluent samples (USEPA, 2010) were used to determine surcharges for these constituents. Based on these concentrations and average rates for industrial users of WWTPs, the total cost for sewage treatment and disposal of fish hold effluent is estimated to be $5.02 /1,000 gallons.

Table 2. 2007 Fish Hold Effluent Treatment and Disposal Costs

Rate component	2007 Average
Volume charge	$2.76 /1,000 gallons
BOD surcharge	0.2625 /pound
BOD charge	$1.84 /1,000 gallons
TSS surcharge	0.2421 /pound
TSS charge	$0.42 /1,000 gallons
Total charge	$5.02 /1,000 gallons

Source: NACWA, 2008

As noted above, the feasibility of onshore treatment and disposal of fish hold effluent and fish hold cleaning wastewater depends upon the nature of the effluent (i.e., RSW or ice), the method of conveyance from ship to shore (e.g., pumping, fish totes), and the availability of a facility to accept, convey and treat the waste. In some cases, capital expenditure may be necessary to construct or upgrade the facilities to allow them to accept fish hold wastewater. Costs of construction/upgrading would be highly specific to an individual site, and no general estimates of such capital expenditures are available. For example, the investment of $1.6 million for improvements made at Pier 45, which allow herring boats to discharge fish hold effluent to the City of San Francisco sewer system, is likely to be a high estimate for such a system, because that project also included the installation of a new stormwater collection system. On the other hand, at some seafood processing facilities the capability to accept fish hold effluent may already exist.

SECTION 7
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ATTACHMENT A:

SUMMARIES OF INFORMATION GATHERED IN TELEPHONE CONVERSATIONS

ERG	Project No.: 0256.03.001.004		DISTRIBUTION Page 1 of 1
	Project Name: Vessels – Technical Support		
TELEPHONE CALL RECORD Outgoing Call	Date: Aug, 12 2010	Time: 6pm	
Company Name: Sitka Seafood Co-op	Contact Name: Craig Shoemaker Phone No.: 907-747-5811		
Name: Kathleen Wu			
GENERAL SUBJECT : Information on the Fishing Industry			

TOPICS DISCUSSED AND ACTION TAKEN

Craig Shoemaker is a plant manager at the Sitka Seafood Producers Co-op in Sitka, Alaska. I told Mr. Shoemaker that I had spoken with Linda Behnken earlier and that she mentioned the Co-op was now accepting "dirty" fish hold ice from boats. He confirmed this practice and said that their facility is permitted through the NPDES program to collect their seafood processing wastewater, send it through their primary grinder, and discharge it through their dockside outfall. The processing facility "felt obligated" to accept dirty ice from some fishing vessels since the processor had the means to manage it onsite. The facility began this voluntary process of collecting dirty ice in the fall of 2009.

If the ice appears to be relatively clean upon inspection, the facility does not bother with collecting the ice and asks the vessel operators to shovel it overboard per their usual practices. Most of the Co-op's vessels process their catch immediately after bringing it onboard and before anything enters the hold tanks, so the ice remains very clean. However, the cleanliness of the tanks can depend on the fish species. For example, some bottom fish species can excrete slime after processing, which influences the amount of cleaning required later.

99% of the fish processed at this facility is salmon. Last year the facility processed 500,000 lbs of halibut, 1.3 million lbs of black cod, and 300,000 lbs of rockfish. Salmon and black cod are sold as whole fish so require little processing at the facility itself.

I asked if the Co-op accepts only dirty ice or also dirty refrigerated seawater from in fish holds. Mr. Shoemaker stated that the Co-op only has the ability to take ice from boats using the same totes that are used to off load fish. The ice is collected, melted, and then sent to a sump. The vessels with refrigerated seawater have no way of pumping their fish hold wastewater into the facility. However, the Co-op operates a fleet of about 120 hook and line vessels and 4 gillnetters and the majority of these vessels only use ice tanks. Refrigerated seawater tanks are primarily used by purse seiners, which are not members of the co-op. All 4 of the gillnetters and about 5% of the hook and line vessels use refrigerated seawater tanks or a mixture of ice and ambient seawater. All the fish hold wastewater from these vessels is discharged directly overboard per their usual practice.

Fish hold cleaning is also performed after each offload on these vessels. Any wastewater generated from this activity is also discharged directly overboard. Most vessel operators use bleach, joy dish soap, or any FDA-approved food grade cleaners.

The only other facility that also offers a similar dirty ice service for their vessels is Alaska Glacier Seafood in Juneau, Alaska.

ERG	Project No.: 0256.03.001.004		DISTRIBUTION Page 1 of 1
	Project Name: Vessels – Technical Support		
TELEPHONE CALL RECORD Outgoing Call	Date: Aug, 11 2010	Time: 2pm	
Company Name: Alaskan Longline Fishermen's Association	Contact Name: Linda Behnken Phone No.: 907-747-0695		
Name: Kathleen Wu			
GENERAL SUBJECT : Information on the Alaskan Fishing Industry			

TOPICS DISCUSSED AND ACTION TAKEN

Linda Behnken is a representative of the Alaskan Longline Fishermen's Association and an avid fisherman owning her own longliner vessel and fishing when she can along Alaska's coast. Her expertise is in longliner vessels.

These longliner vessels range from 14 ft skiffs to 70 ft vessels. The majority of the longliners however range from 40 ft to 60 ft. The longliners mainly fish for salmon, halibut, rockfish, black cod, and a few other species that belong to multi-species fisheries, such as skates. Although the sizes of the vessels are not really species dependent, Black cod fishing longliners tend to be larger ranging from 40 ft to 70 ft, because their target species are concentrated in deeper waters and require the fisherman to travel further out from shore. Almost all longliners do some amount of fish processing immediately after the fish are caught. This includes gutting, bleeding, heading and clean the fish before stowing them into their tanks.

The vast majority of longliners are ice boats. These ice boats have fish hold tanks that are filled with clean ice prior to fishing. As the tanks are filled with fish and the ice melts, any water is pumped out of these tanks via the bilge pump automatically. When the boats return to the seafood processing facility, the catch is offloaded and any ice is shoveled out of the tanks directly overboard.

The remaining longliners have refrigerated seawater (RSW) holding tanks. Ms. Behnken estimates longliners with RSW tanks make up about less than 10% of all longliners in Alaska. She added that it is very different than purse seiners, the majority of which have RSW tank systems. These vessels also discharge their fish hold wastewater directly overboard after offloading their catch to a shore side seafood processor.

Ms. Behnken also confirmed that longliners almost always clean their tanks between each offload. Most use pressure hoses with water to keep their tanks clean, but some add mild detergents when needed. The soaps that are most commonly used are dish soap, biodegradable detergents, or a very mild bleach solution. She said that the fishermen are very careful to not use

any detergents that could affect the food grade of the fish. In other words, only soaps they felt comfortable using in a kitchen or for cleaning dishes.

When asked about any exceptions to managing fish hold discharges, Ms. Behnken noted that the Sitka Seafood Co-op has just started a new policy of collecting visibly "dirty" ice from fish hold tanks. Most of the time the ice is allowed to be shoveled overboard, but if the ice appears to be very bloody or contain significant fish guts and slime, the facility asks that the ice be shoveled into totes (the same totes the fish were offloaded in) and taken into the facility. She was not sure how the facility then manages the ice, but speculated that they probably first allowed the ice to melt and then sent everything through the facility's macerator prior to discharged via their outfall. She also stated that this new activity was likely a result of trying to keep their dock and shore clean and free of birds.

ERG	Project No.: 0256.03.001.004	DISTRIBUTION Page 1 of 1
	Project Name: Vessels – Technical Support	
TELEPHONE CALL RECORD Outgoing Call	Date: Aug, 12 2010 / Time: 7pm	
Company Name: United Fishermen of Alaska	Contact Name: Mark Vinsel Phone No.: 907-586-2820	
Name: Kathleen Wu		
GENERAL SUBJECT : Information on the Fishing Industry		

TOPICS DISCUSSED AND ACTION TAKEN

Mark Vinsel is the Executive Director of United Fishermen of Alaska, an umbrella organization that represents 38 smaller fishing vessel associations in Alaska, such as District Fishermen United, Alaskan Longline Fishermen's Associations, Alaska Trollers Association, etc. Thus their members operate the entire range of fishing vessels and fish in all the fisheries.

As discussed in the 2009 comments provided on fishing safety (Attachment 1), there are about 10,000 permitted and active vessels in Alaska. 9,828 vessels ranged in size from 7 feet to 635 feet and included skiffs, gillnetters, purse seiners, trawlers, crabbing vessels, tenders, and trollers. Of these vessels, many are equipped to fish several different species through out the year by modifying their gear type. Gear type modification mainly involves changing on desk equipment and other machinery. The following are some statistics included in the report.

Vessel Size Distribution
1. 2,009 vessels (20%) are 20ft or less;
2. 2,363 vessels (24%) are between 21ft and 29ft;
3. 4,096 vessels (42%) are between 30ft and 49ft;
4. 863 vessels (9%) are between 50ft and 79ft; and
5. 497 vessels (5%) are over 79ft.

Age of Vessels Distribution
1. 634 vessels are over 50 years old, built before 1959, (two are over 100 years old);
2. 463 vessels are 40 to 50 years old, built in 1959 – 1968;
3. 2,070 are 30 to 40 years old, built in 1969 – 1978;
4. 3,626 are 20 to 30 years old, built in 1979 – 1988;
5. 2,265 are 10 to 20 years old, built in 1989 – 1998;
6. 646 are less than ten years old; and
7. 4,395 (45%) are of 5 net tons or less and not currently required to be documented vessels.

Gear Types Distribution

1. 54% operate one gear type;
2. 24% operate two gear types;
3. 11% operate three gear types;
4. 4% operate four gear types;
5. 2% operate 5 or more gear types;
6. Two vessels are registered under 11 different gear types; and
7. The remaining vessels did not specify gear type.

Mr. Vensel stated that larger vessels generally operate more gear types and have more deck space to switch out equipment as needed.

Mr. Vinsel said that he was unsure about the distribution of vessels that have refrigerated seawater (RSW) tanks or use ice tanks, but generalizations can be made. For example, almost all purse seiners, tenders, and crabbing vessels have RSW systems, while hook and line and set-net vessels use ice tanks. A vessel with an installed RSW system would not use the tanks as ice tanks even if their gear type changed.

Mr. Vinsel stated that as far as he is aware, all vessels discharge their RSW tanks and ice tanks directly overboard after off loading their catch. This includes any wastewater from tank cleaning as well. I told him that the Sitka Co-op was actually accepting "dirty" ice from some of their vessels. He said that he has never heard of this, but was not surprised to learn of voluntary practices from more progressive communities. When I asked him which other communities he would also consider progressive in Alaska, he stated that Cordova is considered more progressive, but doubted they would have voluntary environmental practices similar to Sitka because it is not a cruise ship community.

Mr. Vinsel also provided the following website http://www.cfec.state.ak.us/plook/, which has additional Alaska vessel information and statistics. His instructions were to select the "Yearly CSV" tab, select "Vessels" under File Type, and then select the year of interest. He said that this method provides the most complete data sets.

Mr. Vinsel also offered some additional contacts, but they were all already on my contacts list.

UNITED FISHERMEN OF ALASKA

211 Fourth Street, Suite 110
Juneau, Alaska 99801-1172
(907) 586-2820
(907) 463-2545 Fax
E-Mail: ufa@ufa-fish.org
www.ufa-fish.org

July 29, 2008

Docket number USCG-2003-16158

Attn: Rear Admiral Brian M. Salerno,
Assistant Commandant for Marine Safety, Security and Stewardship
U.S. Coast Guard
By Fax: 202-493-2251

United Fishermen of Alaska Comments on Advance Notice of Proposed Rulemaking for Commercial Fishing Vessel Safety

A. Background on United Fishermen of Alaska

United Fishermen of Alaska (UFA) is an umbrella association representing 37 commercial fishing organizations from fisheries throughout Alaska and its offshore waters. UFA passed a resolution in 2007 (attached), supporting the Commercial Fishing Industry Vessel Safety Advisory Committee, and the Commercial Fishing Vessel Safety Act of 1988 by which the committee was established, and encouraging member organizations to:

1. Strongly urge all members and fishermen to ensure that the required Coast Guard safety gear is onboard, is properly maintained, and crew are all instructed in its proper usage, where applicable.
2. Participate in the Coast Guard dockside exam program and maintain a current decal, where applicable.
3. Ensure that all crew participate in regular hands-on emergency drills conducted by a certified drill instructor who is preferably a member of the crew, where applicable.
4. Ensure that new crewmembers be given a safety orientation addressing what to do in the event of emergencies and proper use of appropriate safety and survival equipment prior to getting underway.
5. Ensure that safety programs be regularly reviewed.

The enactment by Congress of the Commercial Vessel Safety Act of 1988 and the work of the Commercial Fishing Industry Vessel Safety Advisory Committee has continued to improve the fishing industry safety record. The effectiveness of the safety measures and the committee have been remarkable – with nearly a fourfold drop in fishing fatalities since the measures went into effect in 1992 (from statistics from Alaska Marine Safety Education Association).

B. Commercial Fishing Industry Vessel Safety Advisory Committee

UFA supports the work of the Commercial Fishing Industry Vessel Safety Advisory Committee (CFIVSAC) and maintains regular communications with its current chairman, Jerry Dzugan. We reiterate the direction of the committee in stressing that for meaningful improvements in commercial fishing safety, regulators need to look more deeply into the topic than is indicated in the advance notice of proposed rulemaking. The separation of fishing vessels into categories based solely on vessel length is not a meaningful way to address fishing safety, and ignores the fact that there are hundreds of different fisheries conducted in our nation's waters, and each is unique. We strongly advise that attention be applied to assessing risk by fishery, then working with fishermen in fisheries that are shown to present a higher than normal risk to fishermen. To continue forward without consideration for different fisheries is a scattershot approach that brings undue costs and burden to regulators and to fishermen, and is not a cost effective problem solving methodology for further improvements in fishing safety. We recommend that you first identify the problem areas of fisheries that show high levels of fatalities. The Center for Disease Control National Institutes for Occupational Safety and Health (CDC-NIOSH) is in the process of long term studies on fisheries that will inform the Coast Guard in this direction.

C. Risk by Fisheries in Alaska

The Alaska Commercial Fishery Entry Commission regulates permits for Alaska state waters fisheries. A listing of fishery codes online at http://www.cfec.state.ak.us/misc/FshyDesC.htm shows 24 categories of fish species codes, 22 regulatory area codes, and 17 gear types altogether making for 325 different fisheries.

In the timing of the current Advance Notice comment deadline, we were unable to obtain thorough data on safety and fatalities in Alaska's fisheries, but we were provided general data on salmon fisheries. From records of Alaska fishing fatalities provided by the Center for Disease Control National Institutes for Occupational Safety and Health, there were 34 fatalities incurred in Alaska salmon fisheries from 2000 – 2007. To get an idea of the relative safety of the different types of salmon fisheries, we have estimated round numbers for crew to see how the fatalities compare to total participants. The results of this very preliminary assessment illustrate that there are significant differences in risks based on fishery. We encourage that this kind of assessment take place to identify problems in fishing vessel safety, so that appropriate solutions can be targeted without undue costs in fisheries that do not share the risks that a particular solution addresses.

Alaska Salmon Fatalities per total estimated participants, by gear type, 2000-2007

Gear Type	Fatalities	Number of permitholders	Est. Crew	Total est. participants	Fatalities/participants
Drift Gillnet	17	3911	5800	9711	0.175%
Set Gillnet	8	4505	4000	8505	0.094%
Troll	4	3239	3200	6439	0.062%
Seine	2	1422	5000	6422	0.031%
Total	31	13077	18000	31077	0.100%

Notes: Does not include 2 salmon tender fatalities and one salmon processor fatality
Drift Gillnet estimated crew of 2 for Bristol Bay (4000) plus 1 for other areas (1800)
Set Gillnet estimated crew of one per site.
Troll crew estimated 1 per vessel
Seine estimated crew of 5 for SE (2000) plus 3 for other areas (3000)

D. Fishing Vessels in Alaska

A listing of commercial fishing vessels registered in Alaska is available online at http://www.cfec.state.ak.us/publook/other.jsp. This listing provides valuable insight into the wide range of Alaska fishing vessels and raises doubts on the applicability of concepts contained in the advance notice of proposed rulemaking. We appreciate the intention of different safety requirements for different size vessels, but a seven tier categorization by vessel length, as shown in Table 4 in the Advance Notice falls short of meaningful differentiation of the safety needs in different fisheries. Differentiation using vessel size would cause some vessels within a fishery facing the same risks to have different regulations than another vessel. This seems appropriate in equipment common to all vessels such as the need for fire extinguishers – but other times it is not. More in depth risk assessment may indicate that stability regulations should be designed based on fishery more than vessel length, or a combination of the these and other factors.

The lengths of commercial fishing vessels registered in Alaska shows a wide range that may not be the common perception:

-9828 Commercial fishing vessels were registered in Alaska in 2007, ranging in length from 7 feet to 635 feet.

-Over two thousand Alaska commercial fishing vessels are of 20 feet or less in length.

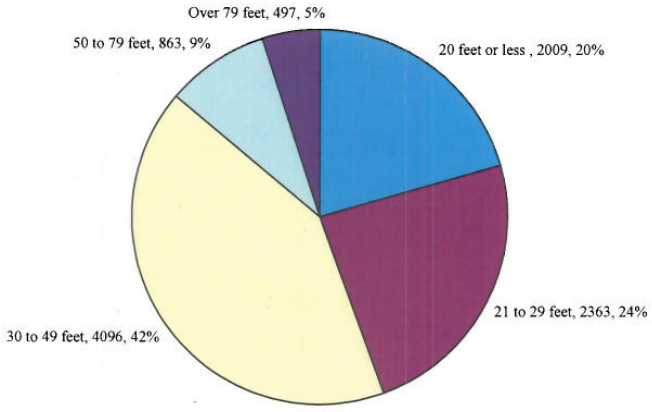
-Over two thousand are from 21 to 29 feet.

-4,404 are from 30 to 49 feet

-863 are from 50 to 79 feet

-497 vessels are over 79 feet

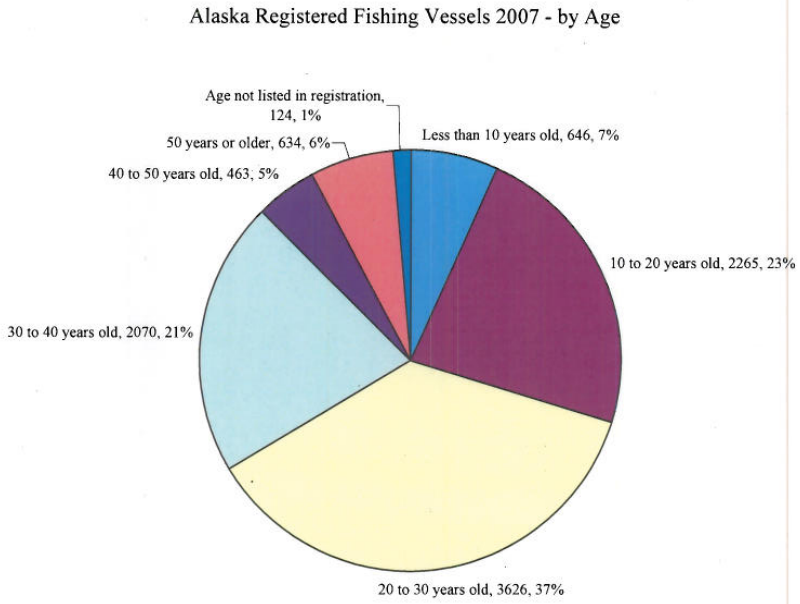
AK State Registered Fishing Vessels 2007 - by Length



E. Age of Alaska Fishing Vessels

The wide range of age of fishing vessels in Alaska in an indication that the application of ABS classification is not feasible, even with a long phase in period:

-634 vessels are over 50 years old, built before 1959, (two are over 100 years old).
-463 are 40 to 50 years old, built in 1959-1968
-2,070 are 30 to 40 years old, built in 1969 – 1978
-3626 are 20 to 30 years old, built in 1979-1988
-2265 are 10 to 20 years old, built in 1989 – 1998
-646 are less than ten years old.
- 4395 (45%) are of 5 net tons or less and not currently required to be documented vessels.



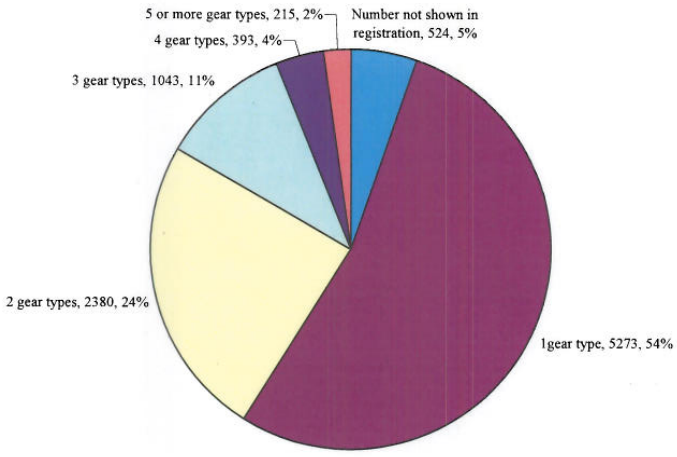
F. Stability Assessments and changes in deck gear

It is also not easy to categorize fishing vessels by gear type. It is common practice for fishermen to fish in different fisheries with the same gear type, often changing deck gear multiple times through a fishing year.

Understanding the concepts of stability assessment is vital to fishermen as they change deck gear, but a requirement for documentation of calculations for every combination of gear on board a vessel will become burdensome and unworkable for many fishermen.

F. Stability Assessments and changes in deck gear (continued)
Of 9828 vessels, 4031 (41%) are registered to fish more than one gear type.
215 vessels are registered to fish 5 or more gear types.
Two vessels are registered to fish 11 different gear types.

AK Fishing Vessels 2007 - Number of Fishery Gear Type Endorsements



G. Fish Safe Website
We appreciate the creation of the Fish Safe Website at www.fishsafe.info , and monitor it at least monthly and relay items of importance to Alaska fishermen to our email list of approximately 1500 individuals. We have heard anecdotally that staff at U.S. Coast Guard headquarters for fishing vessel safety has been reduced and ask that you ensure that adequate staff resources to maintain and grow the site to retain its usefulness are intact.
In particular in researching this topic, we found that a link for certified dockside examiners in Alaska was broken. This was reported to staff, and we were provided with a list of certified dockside examiners within the Coast Guard, but this does not include private individuals that have also been certified. We ask that the Fish Safe website include a comprehensive list of all certified examiners, and also include an up-to-date calendar showing all scheduled locations of courtesy dockside exams.

H. Voluntary vs. Mandatory Dockside Safety Exams
UFA encourages all skippers to participate in voluntary dockside exams, but this is not always feasible without undue costs. Although courtesy free dockside exams were conducted in more than 65 Alaska ports, this does not cover all vessel home ports, and traveling to a port solely for a dockside exam would prove an economic hardship to many vessel owners.

H. Voluntary vs. Mandatory Dockside Safety Exams (continued)
Rather than mandating dockside exams, we suggest instead more meaningful incentives for participation. The best incentive would be a reasonable expectation that the dockside exam would prevent routine boardings without reasonable cause. According to Coast Guard News, April 29, 2008, "Fishermen operating vessels with recently-issued decals benefit by being less likely to have to suspend fishing operations to accommodate an at-sea Coast Guard or Alaska State Trooper law enforcement boarding."
Alaska fishermen commonly report this to not be the case, and many report being boarded more than once in a fishing season even with a current decal displayed. The Coast Guard should have a database that shows when courtesy exams were conducted rather than asking the vessel captain the date. Boardings of vessels while transiting or fishing interferes with fishermen's livelihoods, and is unnecessary on vessels that have already undergone a recent dockside exam. Standard operating procedures should instruct Coast Guard personnel to not delay or interfere with fishing vessels on the water displaying recent safety exam decals without reasonable cause.

I. Voluntary vs. Mandatory Stability Training
While offering stability training during "off seasons" may make this more convenient for many, it brings up the problem of providing training where fishermen live. Over 25 percent of Alaska permitted fishermen live outside Alaska, some in every state of the U.S. We suggest that training be available online, yet still this would not remove our concern that making these trainings mandatory would present a logistical difficulty and cost to many who do not have internet access or live in areas not served with Stability Training classes. The CFIVSAC recommended that stability training for vessels over 30ft to be vessel specific. This would be extremely expensive for operators and vessels that only have one or two fishermen located in remote rural communities.

J. Mandatory Safety Equipment & Survival Craft
The listing above of the length of fishing vessels in Alaska illustrates the impracticality of imposing requirements on all vessels for survival craft and embarkation stations, as very small vessels have no room for carrying a survival craft and no need for a designated embarkation station.

It is also important to note that purse seine fisheries are conducted with a skiff that tows the seine net from, and back to the primary vessel. In purse seine fisheries the seine skiff should not need to duplicate the safety equipment that is carried on board the seine vessel.

Embarkation stations are impractical on vessels less than 79 to 100 ft range. Vessels smaller than this size are well known to the individuals onboard the vessel. Designating an embarkation station and providing lighting and boarding ladder on only one side of the boat may hamper the ability to use the safety equipment if the vessel is listing to that side. If all the training and drills are done specific to it being done in only one way and place, in the case of an emergency the individual might not be able to react as quickly as needed.

K. "Safety Regulations" currently in place that do not address safety
Regulations that dictate what a fisherman may do with fish once caught, such as the prohibition of filleting on board, have nothing to do with safety and should be eliminated.

L. Documentation – Trip Departure Report

Fishing is often an exploratory venture and fishermen need to be able to seek fish, which may or may not be found where expected. The requirement of filing a departure report with a vessel's owners before leaving on a fishing trip is an unnecessary burden and should be left to the discretion of the owner of the vessel. Most vessels under 79 ft in Alaska are owner-operated, which raises the question of who will these owners file a departure report with. Many fishermen plan to leave but then wait for a day or two or anchor up and wait for the weather to clear before fishing. Although recordkeeping of safety activities may be required for enforcement purposes, we do not see a clear safety benefit to the filing of trip reports.

M. Other Comments

Commercial fishing is a challenging occupation, with high operating overhead and no guarantee of income. Any regulations in the name of safety that cost fishermen money or usurp fishing time have a negative effect on fishing income and the ability to provide optimal safety equipment. All fishermen understand the dangers of fishing and the need for preventative vessel maintenance and working safety equipment, and appreciate a common sense approach that allows economically viable fishing.

Although we understand that federal fisheries policy is not within the jurisdiction of the Coast Guard, it plays a huge role in fishing safety. We point out that there have been no crew deaths in the Alaska Bering Sea crab fishery since major regulatory changes were implemented beginning in 2005. The high number of casualties that occurred in this fishery prior to these changes is referenced in the Advance Notice as a prime motivator for stability training – but that is not the only solution:

> "In 1999, due to the high number of deaths in the Alaska/Bering Sea crab fisheries, the Coast Guard and the Alaska Department of Fish and Game began a program to analyze crab-vessel loading when stability instructions are provided on board the vessel prior to departure. Despite having stability information on board, overloading still occurred in some instances. Factors contributing to this, as confirmed in casualty investigations, are that the calculations often were not understood by operating personnel and stability information was often not updated after changes were made to the vessel, which invalidated the instructions provided…"

- The Coast Guard should not discount the fact that major fishing safety improvements may occur in regulatory areas outside of Coast Guard jurisdiction. UFA supports the regional fishery management council process that allows a forum for fishermen to work collectively to solve problems, through which changes in the Bering Sea Crab fishery were implemented.

N. Timing of Advance Notice and Comment Period

Many Alaska fishermen fish in all months of the year, but virtually all of Alaska's fishermen make the most of warmer summer months and the timing of salmon runs to fish throughout the summer. The timing of your request for comment in spring and early summer, and the comment deadline of July 29 will prevent many Alaska fishermen from providing comment on the Advance Notice of Proposed Rulemaking.

We have been notified by Coast Guard and fishing vessel safety contacts that the comment period is to be extended though December 2008, and we support this extension. The extension of the comment period will allow fishermen to provide comment, and will allow UFA's member organizations to discuss this important topic for further comment.

O. Recognition of Exemplary Service by U.S. Coast Guard in Alaska Fishing Safety
In closing, we appreciate the attention by the Coast Guard to fishing vessel safety, and especially the exemplary work of the many Coast Guard personnel who make continued noble efforts in responding to emergencies that arise in Alaska's fisheries.

Thank you for consideration of these comments.

Sincerely,

Joe Childers
President

Mark Vinsel
Executive Director

ERG	Project No.: 0256.03.001.004		DISTRIBUTION Page 1 of 1
	Project Name: Vessels – Technical Support		
TELEPHONE CALL RECORD Outgoing Call	Date: Aug, 20 2010	Time: 2pm	
Company Name: West Coast Seafood	Contact Name: Rod Moore Phone No.: 503-227-5076		
Name: Kathleen Wu			
GENERAL SUBJECT : Information on the Fishing Industry			

TOPICS DISCUSSED AND ACTION TAKEN

Rod Moore is a representative of West Coast Seafood, a trade association that represents 12 seafood processors located in Washington, Oregon, and California. The seafood facilities process several species of tuna, 12 species of ground fish, crabs, salmon, sardines, whiting, and swordfish year round.

Mr. Moore was unsure of the type of vessels or the lengths of the fishing boats but offered the following generalization based on his knowledge of the fishing industry. Almost all crabbing vessels use live tanks that circulate seawater to keep the crabs alive. Tuna, ground fish and swordfish are generally flash frozen onboard or kept in ice tanks. Sardines, however, are fished most frequently on vessels with RSW systems or ice slurry tanks.

Mr. Moore is unaware of any seafood processors, whether they are part of his association or not, that collect fish hold effluent or used ice from these vessels. He confirmed that all fishing vessels discharges their fish hold effluent immediately overboard following offloading at the seafood processor. Any fish hold cleaning discharges are managed the same way. He is unaware of any other management processes for fishing vessels or seafood processors. He stated that the processors he represents are generally located in secluded or rural areas where the local sewage or POTW systems would not have the capacity to handle that volume of waste. I mentioned that San Francisco Bay may have a fish hold offloading site where vessels can discharge their fish hold effluent directly into the San Francisco sewage system. Mr. Moore stated that he is unaware of this service offered by the Bay, but he is also unfamiliar with the processors in that area. However, if it would not surprise him if San Francisco's sewer system had the capacity to manage fish hold effluent from several vessels a day.

GLEC Great Lakes Environmental Center		DISTRIBUTION Page 1 of 1
	Project Name: Vessels – Technical Support	
TELEPHONE CALL RECORD Outgoing Call	Date: Aug, 13 2010 Time: 1:30pm	
Company Name: San Francisco Port Authority	Contact Name: John Mundy Phone No.: 415-274-0256	
Name: Michelle Moore		
GENERAL SUBJECT : Information on new Pier 45 system for capture of all water and ice discharged with catch		

TOPICS DISCUSSED AND ACTION TAKEN

The Port Authority in the City of San Francisco re-engineered the pier and put in a pump system that captures all water and waste that had previously washed into the bay. There are 15 seafood processors on Pier 45 and their operations have had sewer service in place for some time. After being screened for solids, which are sent to be composted, the wastewater from these processors is routed to the city sewer. Water discharged onto the Pier deck from fish holds, etc. used to wash back into the bay. This water is now captured by the new design. The seafood processors have permits and if they were to get sued for allowing gurry (the W coast term for bail water?) to go into the bay, they could get sued, and their landlord, the City of SF, would get sued as well. Three pump-out manifolds were installed for pumping out fish gurry. He said the worst offenders have been the herring operations because they just want the roe so they don't care about the condition of the fish.

John is retiring today. If we have additional questions, we should contact Jay Ach (415-274-0562).

ERG	Project No.: 0256.03.001.004	DISTRIBUTION Page 1 of 1
	Project Name: Vessels – Technical Support	
TELEPHONE CALL RECORD Outgoing Call	Date: Aug, 11 2010 Time: 4pm	
Company Name: Western Fishboat Owners Association	Contact Name: Wayne Heikkila Phone No.: 530-229-1097	
Name: Kathleen Wu		
GENERAL SUBJECT : Information on the Fishing Industry		

TOPICS DISCUSSED AND ACTION TAKEN

Wayne Heikkila is a representative of the Western Fishboat Owners Association. He mainly works with trollers and hook-and-line vessels (longliners) that fish in the Pacific Ocean and offload along the US West Coast. These vessels primarily fish for Albacore tuna, salmon, and a variety of crabs throughout the year.

About 50% of vessels use dry blast freezing systems. These systems have no fish hold discharges but do occasionally need to be cleaned between seasons. Mr. Heikkila stated that the cleaning is similar to defrosting a refrigerator and any water or condensation is discharged overboard. These dry blast vessels are similar to the trollers in the Gulf Coast used to catch shrimp, but used exclusively in the Pacific for tuna. The tuna season generally lasts from June to late October, but there is some amount of fishing occurring as far as American Samoa during other parts of the year. The fish are caught and frozen whole immediately with no processing on board the vessels. The reason for this is that tuna tend to be very clean fish and are delivered whole because the industry prefers that all the processing to be done at the processing plant closest to where the fish is ultimately consumed. The only processing ever performed on board is limited to gill bleeding the tuna.

About 40% of the vessels use refrigerated seawater/recirculated sea water/brine systems. The majority of these vessels are used for crabbing. The remaining 10% of vessels use ice tank systems and are used primarily for salmon. All fish hold tanks on these vessels discharge their effluent directly overboard following the offload of their catch. This includes any fish hold tank cleaning activities as well.

Mr. Heikkila also provided the following contacts for information gathering purposes:

Moore, Mr. Rod
Executive Director, West Coast Seafood
Processors Association

1618 SW First St, Ste 318
Portland, OR 97201
Telephone: 503-227-5076
Fax: 503-227-0237
Email: seafood@integra.net

Marchand, Jr., Mr. Pierre
Processor
President, Jessie's Ilwaco Fish Company
PO Box 800
Ilwaco, WA 98624-0800
Telephone: 360-642-3773
Fax: 360-642-3362
Email: pierrem@ilwacofish.com

Pleschner-Steele, Ms. Diane
Executive Director, California Wetfish Producers Association
PO Box 1951
Buellton, CA 93427
Telephone: 805-693-5430
Fax: 805-686-9312
Email: dplesch@earthlink.net

Alverson, Mr. Robert
Fishing Vessel Owner's Association
4005 - 20th Ave W, Room 232
Seattle, WA 98199-1290
Telephone: 206-283-7735
Fax: 206-283-3341
Email: robertalverson@msn.com

Fricke, Mr. Douglas
WA Troller Assoc
Boat Seafoods
PO Box 306
Hoquiam, WA 98550
Telephone: 360-580-3027
Fax: 360-538-0466
Email: dfricke@techline.com